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THE ROLE OF INTERNATIONAL COLLABORATION ARRANGEMENTS IN DEVELOPING COUNTRIES' EXPORTS OF MANUFACTURES

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Summary and conclusions

(i) The experiences of the 1980s underline the importance which various forms of foreign investment and enterprise linkages can have for export success of developing countries. The steep growth of manufactured exports from developing countries in recent years has gone hand in hand with a rapid intensification of co-operation between firms from developed and developing countries.

(ii) In comparison to past decades, alternative choices for the forms of industrial collaboration linkages were intensified; besides traditional forms of foreign direct investment in the form of subsidiaries or majority holdings, export-oriented collaboration through joint ventures and sub-contracting have become more significant.

(iii) Main factors underlying this clear shift towards export-oriented and diversified industrial collaboration included on the one hand: a pronounced change in strategies changed of developed countries enterprises: global specialization of production; global sourcing of parts and components; relocation of labour-intensive production processes to developing countries; and increased flexibility in their attitudes towards non-traditional forms of co-operation and export-orientation of foreign investments. On the other hand, various developing countries undertook new initiatives to promote foreign investment, sub-contracting and other forms of international industrial collaboration as part of a new emphasis on export-oriented strategies. Increased experience of developing countries in managing foreign investment promotion policies in line with their development priorities, progress in industrial development and progressive strengthening of domestic

industrial enterprises as partners in international collaboration have been further important factors. The recent rise in foreign direct investment in manufacturing industries of a wider range of developing countries tends to confirm the continuity of these trends for developing countries'exports of manufactures in the future.

(iv) The benefits which developing countries derive from export-oriented forms of industrial collaboration however vary considerably between host countries, industrial branches and the forms of co-operation agreements.

(v) There is a strong, though not exclusive, concentration on rapidly growing, industrially relatively advanced developing countries in South-East Asia and Southern Europe. As available indications show, in technology-intensive industries leading TNCs still tend to insist on full control of enterprises, rather than to engage in joint ventures or other more flexible arrangements. The situation is similar with respect to exports to world markets, as TNCs frequently insist on fully owned subsidiaries -or at least large majority holdings. Resistance was even greater with respect to production and technology licencing and technical co-operation agreements, which are mainly concentrated on basic industries and mature technologies. Many of them include provisions to restrict exports, either totally or outside neighbouring developing countries.

(vi) The rapid rise in international industrial sub-contracting has assumed substantial importance in certain labour-intensive industries or processes, such as clothing and electronic and automotive components: the data show that sub-contracting has made a major impact on exports in some South-East Asian, Mediterranean, Central American and Caribbean developing

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countries. The extent of developing countries' benefits from such arrangements, beyond employment, was, however, in many cases relatively limited through the restricted nature and value added of sub-contracted processes, scarcity of forward and backward linkages with the rest of the economy, and the cost of government incentives such as the provision of infrastructural facilities within export-processing zones and industrial parks. Here again, certain South-East Asian countries achieved higher degrees of diversification and national contents than others, a factor which points to the importance of the production and management capacity of national enterprises.

(vii) Policies in this area should foster stronger linkages with the domestic economy and emphasize the export expansion angle of foreign investment and industrial collaboration agreements.

(viii) Promotional policies for the development of domestic enterprises and marketing management appear to be a key factor in the effective application of all non-traditional forms of investment - like linkages between enterprises at an international level. While Governments of the developing countries of location carry the major responsibility in this regard, there is much scope for co-operation by inducing TNCs to upgrade production, technology and management capacities of developing countries' partner enterprises. The removal of market restrictions in licencing and other forms of co-operation agreements would make a further major contribution to that effect.

(ix) Incentive policies of developing countries should also be assessed with a view to identifying those measures which have been effective in attracting foreign investment and collaboration partners in a manner consistent with national development objectives and priorities. Such an analysis should include the evaluation of realistic means to induce the progressive increase of national value added contents and linkages, as well as the export-orientation of such arrangements (even if they may have started initially at lower levels).

(x) Developed countries' Governments could make a significant contribution to the promotion of more flexible development and export-oriented industrial collaboration. Specific measures could include, for example, the removal of restrictions on outward processing, and the active promotion through contact services, investment guarantees, etc of investment by smaller and medium-scale enterprises in developing countries. Appropriate structural adjustment policies improving market access conditions for finished products from developing countries could make an essential contribution to upgrading industrial collaboration with exports from developing countries.

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I. CHANGING INVESTMENT PATTERNS AND DEVELOPING COUNTRIES' INDUSTRIAL EXPORTS

1. During the 1980s, developing countries achieved an important growth of their exports of manufactures, particularly to developed country markets, as well as a spread of this export success to a larger number of developing countries than had been the case in the past. As a result, several amongst them achieved significant gains in import shares of developed countries.

2. Institutional factors, changing investment strategies and investment patterns made a major contribution to this new trend, together with profound policy adjustments of many developing countries. Changed TNC strategies led to widespread decentralization of investments and production, relocation of labour-intensive production processes to low-cost developing countries and global sourcing. A substantial intensification of intra-industry trade worldwide, as well as a significant increase in the export intensity of TNC production in developing countries were major consequences of this shift in enterprise strategies. These trends were reinforced by major shifts of exchange rate relations between major developed country currencies; a tendency to locate new export-oriented investments closer to major target markets; as well as the possibilities to exploit additional export opportunities created by special or preferential market access conditions existing in certain developing countries.

3. Increased outward orientation of developing countries together with changed TNC strategies brought about a rapid growth of co-operation between enterprises of developed and developing countries during the 1980s. At the same time the forms of such co-operation diversified and their export orientation increased. Particularly dynamic forms of collaboration included

joint ventures with substantial developing country participation in combination with licencing agreements; as well as international sub-contracting. Certain developing countries and industries also tried to promote other forms of long-term co-operation of a non-equity type, such as production and technology licencing, technical cooperation, management and export marketing contracts 1/.

4. The recent dynamics of foreign direct investment in manufacturing industries of developing countries and the changing patterns of such investments constitute another factor which influenced recent export growth and export prospects of several developing countries. After a long period of stagnation, such FDI has rapidly increased since 1987, though with changing partners; much of the new FDI is directed to South and South-East Asian countries, while Japan and a number of developing countries are emerging as major investors in developing countries.

5. Furthermore, developing countries'interest in FDI as a source of non-debt country capital, technology and improved export capacity increased in parallel to the balance-of-payment difficulties, debt problems and the adoption of more outward oriented strategies. Major changes in economic conditions and trade and industrial policies of developing countries influenced the relative attractiveness of different developing regions for FDI. They also strengthened the capacity of developing countries'Governments to negotiate arrangements for FDI which are more in line with their own development objectives, including the export orientation of new investments. Such factors included, inter alia;

1/ See also "New Forms of Investment in Developing Country Industries: mining, petrochemicals, automobiles, textiles, food" by Charles Oman, OECD, Paris, 1989

(i) Rapid growth performance and dynamic market perspectives of some newly industrializating countries in South East Asia;

(ii) Major policy reforms, including important currency devaluations and the launching of comprehensive export promotion programmes, which improved the profitability of production and exporting (for example in Indonesia, Mexico, Costa Rica, Mauritius, etc);

(iii) Large-scale privatization programmes and debt-equity swaps, which provided favourable conditions for acquisition of existing industries by foreign investors (for example in Chile, Argentina, Mexico, Brazil, Philippines, Senegal, Togo and some other highly indebted countries), and

(iv) A certain degree of deregulation of control of foreign capital and investment regulations, or at least increased flexibility with regard to treatment of technology and export intensive investments (for example, in Mexico, Colombia and some South-East Asian countries).

6. The consequent rapid increase of FDI in its different forms, including traditional foreign-owned subsidiaries, joint ventures and non-equity arrangements and sub-contracting, taken as a whole are shown in table 1. This growth concentrated mainly on a number of South-East Asian economies: Thailand, Malaysia and Singapore, which had already enjoyed rapid increases for some years, were joined in 1987 by Indonesia, the Republic of Korea, Taiwan Province of China and the Philippines. FDI in these economies taken as a group rose by about 60 per cent in 1987 as compared to the preceding year (from US $ 8 to 12,4 billion, with variations ranging from 22 per cent to 36 per cent for individual countries), a trend which continued during the first half of 1988. More recently, FDI dynamics also spread to other developing

countries, such as Sri Lanka, Turkey, Chile and Mexico [2/].

7. Like overall FDI, foreign direct investment in manufacturing industries of developing countries recovered from the preceding period of stagnation or recession only since 1987. In that year, it amounted to about 32 per cent of overall FDI of Japan, 22 per cent of United States and 38 per cent of United Kingdom [3/]. The emergence of the Asian developing countries as a leading pole of attraction for new FDI in manufacturing industries was accompanied by a parallel shift of importance between major investor countries. United States-FDI lost its predominant position of the 1970s and early 1980s and declined substantially until 1986 (in that year it was about 60 per cent below 1980 levels) before recuperating vigourously in 1987. Limited data available for EC member countries show diverse trends: increases for the United Kingdom and Netherlands, but decreases for France, for example. On the other hand, Japan has substantially raised its level and participation in FDI in developing countries'manufacturing industries, in particular in the Asian region, and since 1985 consistently exceeded the level of US investments in that sector.

7. At the same time, some more advanced developing economies, such as the Republic of Korea, Hong Kong, Singapore and Taiwan (Province of China) also rapidly expanded their foreign direct investments: developing countries in South-East Asia and their manufacturing industries were one of the major destinations. While the value of FDI of these four economies is still relatively limited, it has become highly important for some of their partners: Taiwan Province of China and Hong Kong already rank third and fifth in cumulative FDI in Thailand; Singapore ranked third amongst all foreign investors in Malaysia and Hong Kong second in Indonesia [4/].

2/ "1989 JETRO White Paper on World Direct Investments", Japan External Trade Organization, March 1989.

3/ Source: UNCTC data base (all definitions are those applied by UNCTC).

4/ JETRO, op. cit.

Similarily, several Brazilian and Argentinian companies have also invested to an important extent in other developing countries. These new sources of investment frequently involved different size of firms, levels of investment and types of investment behaviour, which brought about a significant diversification of choices for host countries.

B. Export-oriented joint ventures

9. In their move towards increased export-orientation, developing countries aimed in particular at attracting foreign investment into export-oriented joint ventures to modernize their industries, introduce up-to-date technologies and boost exports 5/. Several amongst them increased flexibility in their investment regulations and promotional measures in favour of joint ventures whose production was primarily oriented to third country markets, including the possibilities of higher than normal foreign equity participation (e.g. Indonesia, Republic of Korea, Philippines). Simultaneously, there has been a growing willingness by investors (TNCs and others) to accept engaging in joint ventures (JVs) for industrial enterprises located in developing countries, instead of persisting in the establishment of wholly owned subsidiaries. Besides cost considerations, several factors may explain this growing acceptance 6/:

5/ See "Policy Interaction and Direct Foreign Investment in East and South East Asia" by S. Naya, E. Ramstetter, Journal of World Trade, vol. 22 (2), 1988, p. 644 f.

6/ See also "Les sociétés conjointes: éléments de coopération à long terme dans les relations internationales", Industrie et Développement International, June 1986, p. 357f., for a more detailed discussion of the advantages and disadvantages of JVs.

(i) In many countries it is not legally possible to set up a 100 per cent foreign owned enterprise;

(ii) JVs allow to share capital risk, reduce investment capital requirements and to benefit of the local marketing and administrative know-how and improved knowledge and contacts in the host country;

(iii) JVs can frequently benefit from several advantages in the host country; and,

(iv) Increased competition among interested investors.

Nevertheless, marked differences still persist with regard to the readiness to engage in a JV, depending on the location of the JV; the market position of the investing company; the type of product destination and the technology involved; and the market destination.

10. United States investors, although having increased their flexibility, still have a pronounced preference for setting up wholly owned subsidiaries 7/. They are relative newcomers to JVs in developing countries. The host country's ownership policy has been a major determinant for the acceptance of JVs by United States companies. If it was legally required and the only way to maintain an established market position in a large and dynamic developing country, United States investors accepted to enter into a JV arrangement, disregarding their market position. Industry leader companies, however, if they could avoid entering in minority equity sharing arrangements (minority JVs). Smaller producers and "follower companies" were more enclined to accept 50-50 or minority JVs. The investment generally related to the production of standardized products, with rare exceptions in high technology industries, and involved the use mature technologies. The bulk of the production has been oriented to the local market of the host country 8/ and

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7/ The present paragraph is based on a recent survey of the use of new forms of investment by 50 US companies in: "New Forms Investment in Developing Countries by US companies: A five industry comparison" by L.G. Franks, Columbia Journal of World Business, Summer 1987.

8/ Also in the hope of gaining shares in the world market and to ensure exports of parts and components from the partent party at later stages.

only seldom to exports. In fact, United States firms insist on isolating the output of the JV from the firms core business. US overseas export production has been essentially confined to wholly owned subsidiaries or majority JVs. Thus, only few cases of United States TNCs exist which set up JVs as a basis for successful export drive to the United States and other world markets.

11. Japanese investors possess a longer experience of and a more flexible attitude towards JVs in developing countries particularly in Asia and Latin America as compared to United States companies.[9/] Already in the mid-1970s about 80 per cent of Japanese TNCs affiliates in developing countries were 50-50 or minority JVs. Within these minority JVs Japanese corporations generally tended to control strategic decisions. The products concerned by such arrangements were generally fairly standardized and labour-intensive products such as clothing, textiles, footwear or standard consumer electronics. Part of this type of operations has been leading to increased exports to the region of the overseas production base or to re-exports to Japan. For exports of manufactured products to US or Western Europe markets, Japanese TNCs tended to prefer wholly-owned or majority-owned subsidiaries in developing countries to minority JVs.

12. Western European investors, in their large majority, have only recently discovered the advantages of JVs located in developing countries. Because of this relative newcomer position, Western European enterprises, in their desire to catch up in international market shares, have been showing a more flexible attitude towards JVs. They entered more willingly in 50-50 or minority JVs than US companies, especially if it was required by host countries' regulations[10/]. This flexibility is also reflected in the type of

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9/ "Joint Ventures as a Form of International Economic Co-operation", UN-CTC New York 1988 (ST/CTC/93).

10/ UN-CTC, op. cit.

industries concerned by JV arrangements with Western European investors which included high technology products. However, certain European market and technology leaders have been showing (as US companies did) a preference in favour of wholly-owned subsidiaries or majority JVs in developing countries, in particular in the pharmaceutical and the food processing industries.

13. Developing country investors have also been strongly interested in JV arrangements in other developing countries. Apart from industrially advanced developing countries, many regional groupings such as the Andean Group, ASEAN or CARICOM established special arrangements in favour of JVs amongst enterprises of member countries to supply the regional market. The products concerned were generally industrial supplies or basic consumer goods. Several of these projects have not been implemented, but those which have been achieved led to an increase of intra-regional trade. The relative failure of such arrangements to expand motivated the concerned regional groupings to leave more initiative to the private sector.

14. There is very little systematic information on JV arrangements in developing countries, their relative importance in total foreign capital inflows and their market orientation. Table 2 provides a start for collecting more systematic information on the nature of such arrangements, with focus on export oriented JVs.[11/] This table includes a particularly high number of export oriented JVs in South-East Asia (e.g. Thailand, Indonesia, Malaysia and in the Republic of Korea) but also several enterprises in Latin America (Brazil, Chile, Venezuela). Mainly companies of Japan and the USA concluded such JV arrangements but also some companies from other developed countries (France, Federal Republic of Germany, Italy, etc.), from developing economies (India, the Republic of Korea, Taiwan Province of China etc.) and from socia-

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11/ This table presnts only a biased picture of export-oriented JVs because it surveys only a limited period of time and the reported JVs only.

list countries (Bulgaria, China). The shares of equity participation tend to support the preferences of US, Japanese and European TNCs for a majority in export-oriented JVs where possible. The products involved in the arrangements have been very varied. Of the 76 joint ventures or projects surveyed, 13 related to chemicals, 16 to automobiles and parts, 8 to electronics, 7 to metals, 7 to industrial supplies, 5 to electrical machinery and equipment, 4 to food, 3 to machinery and tools, 2 to helicopters[12/] and 1 respectively to arms, textiles, clothing research, furniture, jewelry, leather, glass, live animals and computer software. This reflects the relative reticence to engage in export-oriented JVs for high techology goods.[13/] The JVs for high technology goods have been aimed essentially at entering new regional markets surrounding the country of location. On the other hand, most JVs in the metal sector have been aimed at assuring supplies of the processing industries in the base country of the foreign investor, as was the case, for example, with the Japanese investments in the aluminium industry.

15. More detailed information on the shares of foreign equity in JVs and on the contribution of such JVs to total exports of the country of location is rare. Partial information could only be found for the Philippines [14/] and

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12/ Both in South-East Asia. It is remarkable that in this region the aeronautical sector develops principally through JVs. In Indonesia, a 50-50 JV of the local aircraft corporation with Casa (Spain) resulted in the development of a domestic aircraft, the CN235. IPTN also entered in a JV with Boeing (USA) and MBB (FRG) for this development of a new aircraft. See South, "South Survey: Indonesia", October 1988, p. 63.

13/ This is generally because of the desire to safeguard technology ownership and to maintain quality, delivery schedules and marketing policies within overall corporate strategies.

14/ ITC, "Export Channels in the Philippines: An Analysis of Characteristics and Performance of Different Types of Exporters", Geneva 1987. (Based on a survey of major firms in the Philippines in 1983).

Thailand[15/] In the Philippines JVs contributed 24 per cent of total exports (in 1983); wholly owned foreign subsidiaries 29 per cent; and local companies about 47 per cent: foreign capital and export oriented JVs have thus been playing an important role in the Philippines exports. In Thailand, 72 per cent of the cumulative foreign capital benefiting from investment promotion measures has been invested in JVs by May 1988. The remaining 28 per cent of foreign capital has been invested in 100 per cent foreign owned subsidiaries.[16/] Foreign participation varied widely depending on the type of industry: Japanese and US equity participation in the cumulative capital of firms in operation was highest in the mechanical and electrical equipment branches, amounting to about 70 per cent, while it fluctuated around 35 per cent in most other industries. This is a further reflection of the desire of Japanese and US investors to maintain control over their foreign operations in comparatively high technology sectors, which are often also export oriented.

16. The expansion of JV agreements in manufacturing industries in developing countries has been limited to relatively few countries. The survey of Franks[17/] shows a striking concentration of more than 50 per cent of the US DFI cases in only five countries. Mexico, Brazil, the Philippines, Venezuela and India. The largest proportion of Japanese investment in JVs located in developing countries has also been limited to relatively few countries in Latin America (e.g. Brazil, Mexico and Venezuela) and particularly South-East Asia (Indonesia, Malaysia, the Philippines, Republic of Korea, Singapore, Taiwan Province of China and Thailand). These have pursued consequential domestic policies and regulations regarding foreign investment and dispose of

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15/ E.D. Ramstetter, "Taiwan's Direct Foreign Investment in Thailand", in Development and South-South Co-operation, CICD, Vol. 4 (7), December 1988.

16/ The propensity to invest in fully owned subsidiaries varied dpending on the foreign investor, being highest for Japanese and lowest for Asian developing countries: about 50 per cent, 22-24 per cent, and less than 10 per cent of the capital inflow from respectively Japan, Europe and USA, and Asian developing countries went to fully owned subsidiaries.

17/ Franks, op. cit.

large and expanding domestic markets. They followed fairly firm policies regarding majority national ownership and control of JVs [18/]. At the same time, they applied a certain degree of flexibility regarding degrees of control and ownership for export oriented industries but supplemented them with export targeting and export incentive programmes.

17. These policies benefited from the increasing competititon among interested investing companies in their search for new markets and the need to maintain competitiveness. This competition included companies of all sizes and origins, essentially new-comer companies in the process of catching up with market leaders and brought about the emergence of small and medium-sized enterprises as serious investors. Smaller Japanese manufacturing companies have been particularly active in recent past in investing essentially in Asian countries, but also in the USA and Europe: in 1987 almost 60 per cent of their foreign investment has been directed to the Republic of Korea, Taiwan Province of China, Thailand, Singapore and Malaysia.[19/] Major factors which prompted Japanese small and medium-scale enterprises to invest abroad included the interest in maintaining or expanding sales in the foreign market; following parent companies; supplying parts and equipment to locally established Japanese companies; re-exporting to Japan at a more competitive price; exporting to other countries within the region from an offshore production base in South-East Asia. The small Japanese enterprises have also been particularly interested in finding an outstanding local partner to gather adequate local information and personnel.

18. Minority JVs have generally been exporting to regional markets surrounding the host country or to the home country of the foreign investor (if at all). Only seldom have they directed their production to large

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18/ See also Franks op cit.

19/ See JETRO, op. cit.

developed country markets; such exports remained mainly reserved to wholly or majority owned foreign affiliates. Nevertheless, JVs have and can contribute to the export success in manufactured products in certain countries such as in the Republic of Korea 20/ and the diversification of export production such as in Indonesia and Thailand.

C. Non-traditional forms of investment: production licencing, technical co-operation and export marketing contracts

19. As production, technology and management capacities increased, several developing countries have taken various initiatives to diversify the types of industrial cooperation with TNCs for production for home and export markets. In this process, they relied increasingly on production and technology licencing, technological cooperation agreements, managements contracts, export marketing arrangements and similar forms of non-equity arrangements to replace or complement foreign equity participation in their enterprises.

20. According to recent surveys, licencing arrangements involving developing countries have increased dramatically over the past decade 21/. Licencing or technical assistance and management contracts, coupled with minority joint ventures have become a particularly important new form of investment in developing countries 22/. Through their long-term duration and the combination of different aspects of co-operation, such relationships can assume effectively a character, which provides similar aspects of an investment

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20/ The rapid rise in automotive exports from the Republic of Korea has been wholly based on co-operation and marketing between local and foreign enterprises in the form of JVs. It has accounted for about one fifth of Korea's industrial exports in the 1980s.

21/ "Licence agreements in developing countries", UN-CTC 1987 (ST/CTC/78)

22/ "New forms of international investment in Developing Countries: The National Perspective", edited by Charles Oman, OECD, Paris, 1984.

based on majority equity participation. The host country firms gain access to product and production technology, in exchange for a substantial influence on decision making and reduced capital risks for foreign investors.

21. Some developing countries, such as the Republic of Korea, Brazil, Mexico and India, pursued policies to promote such new forms of industrial collaboration for developing their production, technological and export capacities. This included selective policies for the acquisition of foreign technologies, diversification of partners and separation of sources of capital from those for technology and management. The degree of promotion or regulatory measures varies widely between countries as well as industries, depending on such major criteria as complexity and up to dateness of technology and export orientation.

22. A large part of industrial production based on such forms of technological and production cooperation is oriented towards domestic markets of the host countries. Nonetheless, such non-traditional forms of cooperation have made a significant impact on the development of production and exports in quite a range of basic industries, such as steel, basic chemicals, petrochemicals and cement. Such exports account for appreciable portions of exports of certain developing countries, and have, at times, been highly dynamic. The use of non-equity forms of investment in such industries has been favoured by the fact that they rely largely on mature technologies, which are widely disseminated and can be acquired from a range of alternative sources.

23. Such an approach to developing production and export capabilities, met however, with increasing resistance from TNCs, the more technologies are advanced and complex and the more production is oriented towards exports to major world market. In such branches, leading TNCs continue to prefer

generally traditional forms of FDI for finished products. Nonetheless, there are also cases, where developing countries with interesting, dynamic domestic markets succeeded to arrange for appropriate mixes of arrangements, which both fit within the framework of their industrial policy objectives and are attractive enough for TNCs.

24. The Republic of Korea and Yugoslavian automobile and components industries are examples for combinations of arrangements, which led to successful export to world markets. Yugoslavian export production was originally based on technical co-operation agreements: car models were essentially designed by foreign firms, while production and export marketing were independent. All three major Republic of Korea car producers achieved their export success on the basis of car models and technologies provided by leading world automobile producers. The leading firm combines a minority equity participation with technology co-operation agreements and long term supply contracts for a significant portion of components supplies from the same Japanese partner. But this company exports independently under its own brand name, and has started to increase progressively vertical integration of production and to build up its own technological capacity. The second major supplier started with highly integrated production, a 50-50 % joint venture with a leading US supplier, and export marketing arrangements under which the US partner undertakes exports to the US market under its own brand and marketing arrangements. The third Republic of Korea firm entered into a trilateral arrangement separating the functions of product conception, actual production and marketing: a Japanese minority equity partner provided the car model and production technology, another US minority equity holder assures export marketing in USA [23/]. The Republic of Korea components industry is also relying much more extensively on technical cooperation agreements than on joint ventures. The rhythm of such agreements has rapidly accelerated since

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23/ "La Corée du Sud, nouveau grand de l'industrie automobile mondiale", J. Ph. Rennard op. cit.

1980: out of more than 200 such agreements, 80 % have been concluded during the last four years. A rapidly increasing number of these enterprises is involved directly or indirectly, through the exports of finished cars, in production for exports 24/.

25. From the point of view of the acceptance by TNCs of such non-traditional forms of co-operation in technologically more advanced industries, it appears, that it is rather the smaller and follower-companies, which are inclined to enter into arrangements without majority equity holdings than market and technology leaders (even if there may be some exceptions to this generalization, as in the cases above). Japanese and certain Western European companies have shown relatively greater flexibility in this respect than US companies 25/. Enterprises of Japan, Italy, Sweden and the Federal Republic of Germany play a dynamic role in technology transfer through licencing arrangements. For example, a number of enterprises of the Federal Republic of Germany based their production in developing countries on various forms of non-equity collaboration agreements in such industries as clothing, shoes, cameras, watches, household electronics, typewriters, electrical tools and agricultural and other machinery. Certain of such firms incorporated such licenced products into their overall marketing assortments and export strategies 26/.

26. Apart from their concerns about preservation of modern technologies TNCs also frequently limit export marketing options for their licencing and technical cooperation partners in order to preserve their established domestic and major foreign markets. Within a small sample of industrial licencing

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24/ Automobile Industry in Korea" Korea Automobile Industries Coop. Association, 1988

25/ New forms of investment in developing countries by US companies by Lawrence Franko, op. cit.

26/ Umbruch in der Weltwirtschaft by Fröbel, Heinrichs and Kreye, Rowohlt 1986.

agreements surveyed by UN-CTC, provisions permitting worldwide exports were rather exceptional. Only 20 per cent of the surveyed agreements enabled licence taking enterprises to export towards neighbouring or regional markets, as compared to 40 per cent excluding exports altogether 27/.

27. A further intensification of the use of licencing and technical co-operation arrangements as alternative to traditional FDI depends crucially on the financial and production strength of domestic enterprises, availability of alternative sources of long-term capital, and a sufficient level of education and vocational training.

D. International sub-contracting

28. Marked changes in corporate strategies of major transnational enterprises and a major shift of competitive positions on world markets during the 1980s have contributed to a substantial rise in the use of this form of contractual arrangements between industrial enterprises of all parts of the world, including enterprises in developing countries.28/ While, international sub-contracting has become a major portion of developing countries' exports, national sub-contracting has also gained increasingly attention as a source of indirect exports, and has in certain cases, such as the automotive industries, developed into an independent export industry of

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27/ "Licence agreements in developing countries", UN-CTC, op. cit. (No indications were given with respect ot the remaining licencing contracts).

28/ In line with earlier UNCTAD studies, sub-contracting may be defined as "an arrangement between two manufacturing units, under which one of the units (the subcontractor) provides the other (the principal), on agreed terms and conditions, with products (components or final goods) that are used and/or marketed by the principal under his sole responsibility": see "International sub-contracting arrangements in electronics between developed market economy countries and developing countries", Report by the UNCTAD secretariat, (TD/B/C, 2/144 Suppl.) 1975

its own. International sub-contracting does not cover only operations between two independent firms. Many operations take place between a TNC parent company and its subsidiary abroad (or an affiliated joint venture).

29. A more detailed analysis of pattern and trends of sub-contracting trade between developed and developing countries is possible for that portion that relies upon special customs regulations for outward- (and inward) processing traffic. Such rules provide for duty free re-imports of national materials processed or assembled abroad: in such cases only value added abroad (as well as third country materials) are subject to duty when re-imported into the original country. Detailed statistics are available for USA and European Community on such traffic. US customs provisions under the earlier items 807.00 and 806.30 of this Tariff Schedule of the United States (TSUS) permit duty free re-imports of US manufactured parts and components after assembly abroad.[29/]

US-imports under outward processing provisions

30. US imports under processing regimes from developing countries tripled between 1980 and 1987 from US $ 6 to 18 billion, in spite of increased use of alternative facilities under the Generalized System of Preferences (GSP),and the removal of duties on major sub-contracting products during that period.[30/] This trade grew much faster than total US imports and US imports

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29/ For a precise definition and regulations of the relevant special classification provisions, see "Imports under items 806.30 and 807.00 of the Tariff Schedules of the United States, 1984-1987, Appendix A, United States International Trade Commission (USITC) Publication 2133, December 1988.

30/ "Imports under Items 806.30 and 807.00 of the Tariff Schedules of the United States, 1984-1987.", USITC Publication/2144, December 1988 (and earlier issues).

of manufactures. Assembly imports under these provisions may be estimated to account for about one fifth to one quarter of US manufactured imports from developing countries.

31. US assembly imports under TSUS 807.00 consist of three major components. The most dynamic were the Mexican exports under the special Border Industrialization Programme, which provides special customs and investment incentives for in- bond assembly along the US border area. Main assembly products include automotive products and parts, electronic components, electrical equipment, TV and radio receivers, office machines, medical and scientific instruments, textiles, furniture, etc. US imports of assembly products from Mexico have quadrupled from US $ 2.3 billion in 1980 to US $ 8.6 billion in 1987. While not normally included in Mexican foreign trade statistics, such trade represents an addition of 40 per cent of recorded Mexican global exports.

32. A second major flow consisted of clothing imports from the Caribbean, mainly the Dominican Republic, Haiti, Costa Rica, Jamaica and Colombia (but the country composition was subject to important fluctuations in the 1980s). There are also some exports of electronic goods from that region, as well as rapidly growing exports from Brazil of cars, car parts and consumer electronics (US $ 600 million in 1987). Assembly imports from the Latin American region as a whole grew at an average speed and amounted to about 2 billion US $ in 1987. Such assembly operations account for virtually all manufactured exports from Haiti and the Dominican Republic, about one third of those from Costa Rica and more than one fifth of those from Jamaica. 31/

31/ Estimated by the UNCTAD secretariat, based on USITC publication 2133 and foreign trade statistics of UNSO.

The extensive use of the special processing provisions is mainly due to the fact that most textile clothing and footwear are excluded from both GSP and the original Caribbean Basin Economic Recovery Act (CBERA). A special access programme "807A" was, however, created in September 1986 granting CBERA countries special access facilities for products assembled from fabrics produced and cut in the United States: subject to bilateral agreements, such products are free from duty on the US components, benefit from substantially enlarged quotas , separate guaranteed access levels (GALs) and a possibility for almost automatic and unlimited quota increases for such assembly operations.32/ As a result, it is expected that assembled clothing exports from the Caribbean will increase at a much faster rate in the near future.

33. South-East Asian assembly products constitute over 40 per cent of US imports. There has been a major shift in country and product composition in US imports from that region from the 1970s to the 1980s: a number of new exporters joined the traditional four (Hong Kong, Rep. of Korea, Singapore and Taiwan Province of China), mainly through the shift of new investment in the semi-conductor assembly to new, lower cost locations in Malaysia, the Philippines, Thailand and Indonesia. In the meantime new, technologically more advanced, and more integrated products have taken the lead in the four other countries, such as, for example motor vehicles and parts from the Republic of Korea and computers and parts and taperecorders from Singapore.33/

32/ USITC publication 2144, pages 4-3 f, op.cit. A similar programme was created for Mexico: under this special regime a combined quota for clothing exports based on US and foreign material was established at a substantially increased level, and limited to a 6 per cent p.a. increase.

33/ Coverage of semi-conductor assembly products under 807.00 arrangements has drasticaaly diminished by the removal of MFN duties on semi-conductor imports in 1985 (but some incentives to further use remain in form of small additional import charges).

34. This type of trade with US was very important for Malaysia where it accounted for about one third of total manufactured exports (in 1984); unrecorded "other exports" of this type were also equivalent to one third of recorded manufactured exports of the Philippines. The share of assembly exports to the United States in total exports of manufactures was close to 10 per cent in the Republic of Korea, Singapore and Thailand.

35. Outward processing was small between USA and developing countries from other regions including most American countries (apart from Brazil, Africa or West and South Asia).

EC imports from developing countries under outward processing regulations.

36. EC imports (mainly by the Federal Republic of Germany and France) under outward processing regimes [34/] from developing countries amounted to about US $ 2 billion in 1987, much less than US imports under comparable regimes. EC processing imports grew by about 120 per cent over the 1980-1987 period, slightly faster than total manufactured imports from developing countries and accounted for about 4 per cent of the latter in 1987.[35/]

37. Outward-processing to developing countries by EC is concentrated almost exclusively on Mediterranean countries (62 per cent) and South-East Asia (32 per cent). There was little trade with other developing countries (with the exception of small imports from Brazil and Mexico and French imports from Mauritius).

34/ Originally established by EEC Council Directive 76/119 of 18 Dec. 1975, (and subsequently complemented and amended by various implementing directives).

35/ UNCTAD tabulations based on the data base on foreign trade of the European Community.

38. Main developing European and mediterranean partners of EC included Yugoslavia, Romania, Tunisia, Morocco, Malta and Turkey. Main products included clothing, footwear, furniture, leather and travel goods, etc. Assembly operations also included to some extent electronic components, refrigerators, watch movements, automotive vehicles and components (but were highly unstable in certain cases).

39. In Asia main EC partners include Singapore, Taiwan Province of China, Malaysia, the Philippines, Hong Kong, the Republic of Korea, Sri Lanka and Thailand. Electronic components, radio and television receivers and other electronic products are dominant in that trade. In addition, there are large and rapidly growing flows of computer terminals, central units and parts, assembled watch movements, etc., as well as some more traditional flows of clothing and footwear imports from certain countries.

40. Sub-contracting with EC has become a major portion of exports of certain of its partner countries. Tunisian data for example underline the high and rapidly growing importance of processing traffic: reexports reached in 1986 53 per cent of total exports, half of which consisted of processed textiles and clothing.[36/]

Sub-contracting by Japanese enterprises

41. Japanese industries have made particularly important use of sub-contracting. The use of this technique to reduce cost has been intensified in recent years by rapid wage increases and revaluations of the Japanese currency. Sub-contracting has, however already earlier formed an

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36/ "Tunisie" : Circuits du Commerce Extérieur", ITC/DPMD/89/113, p.16, March 1989.

important corporate strategy of Japanese large-scale enterprises, in particular in the automotive and electronics sector. Offshore plants serve frequently as bases for supplies to all regional assembly operations, if not worldwide. Japanese sub-contracting operations have traditionally been largely concentrated in the Asian region. More recently, Japanese sub-contracting has also increased in Mexico, mainly to reduce costs and to increase competitiveness of Japanese subsidiaries in the United States. Reportedly, over 30 per cent of all Japanese manufacturers operate some type of sub-contracting or assembly type arrangements in low-labour cost countries.37/

Other forms of sub-contracting and alternative arrangements

42. While outward processing is an important and typical portion of industrial sub-contracting, such trade is presumably larger, and more diversified than customs processing statistics would tend to show. The Generalized System of Preferences (GSP) and other preferential arrangements offer more substantial advantages, as duty free treatment extends to domestic value added and components as well. Furthermore, GSP also covers a number of other forms of sub-contracting transactions, which are not covered by customs definitions for processing traffic. For example, some major producers in developed countries have abandoned their own production (including the supply of components) to sub-contractors in developing countries (and elsewhere) and continue to market the foreign products produced according to their plans and

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37/ "The Use and Economic Impact of TSUS Items 806.30 and 807.00 p. 8-22", USITC Publication 2053, January 1988.

specifications under their brand names.[38/] Furthermore, there has been a rapid increase of production under contracts with, and following specifications of, major department stores and buying houses established in developing countries, which is frequently also labelled as a form of sub-contracting.[39/]

43. While GSP (and other preferential arrangements) also has important limitations (such as product and country exclusions, ceilings and other safeguards and origin requirements), its larger benefits have brought about a faster growth of GSP imports compared with processing imports in the United States, processing imports grew by 67 per cent (in terms of US content), while GSP imports more than doubled during the 1980-1986 period.[40/]

Motives for and economic implications of sub-contracting

44. Some data are also available to shed light on main considerations underlying the developments of international sub-contracting and the economic impact on developing countries.

45. A major portion of enterprises involved in sub-contracting in developing countries are still subsidiaries of foreign companies. This was the case, for example, with respect to companies involved in processing trade of the United States. Japanese TNCs are more frequently involved in joint ventures for sub-contracting but the importance of independent sub-contractors has been rapidly increasing in more recent years.[41/] Independent sub-contracting

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38/ Some examples of US and German co-operation are quoted in "Umbruch der Weltwirtschaft", op. cit. and "Structural Change in Export Marketing Channels", op. cit.

39/ "Transnational Corporations in World Development", pp. 164 and ff, op. cit. and "Structural change in export marketing channels of developing countries", op. cit. p. 28 and ff.

40/ "The use and economic impact....." op. cit. p. 4-1.

41/ "The use and economic impact.....", op. cit.

firms have gained in particular in importance in the automotive and electronic sectors of certain South-East Asian countries. In the Asian semi-conductor industry locally owned plants are frequently smaller and engaged in simpler operations than TNC subsidiaries. But some of them are of fairly large size and carry out technologically more advanced testing and production functions (particularly those located in the Republic of Korea, Hong Kong and Taiwan Province of China.[42/] There are also examples of independent assembly or component producers in this and the automotive branches (for example in the Republic of Korea and Brazil which have developed an export marketing capacity of their own.

46. A USITC survey with major US enterprises involved in outward processing contains some indications regarding determinants for the use of sub-contracting.[43/]

47. Main motives for US companies to shift production to certain developing countries were to : (i) benefit from lower wage levels and costs to improve international competitiveness of their final products on local and export markets, (ii) serve foreign markets more efficiently within a worldwide organized production and marketing strategy of the enterprise. Foreign assembly operations have been concentrated on certain typical processes and products: processes with high labour contents; short production runs or frequent product changes (limiting automatization); unsophisticated maintenance requirements of machinery required; production not requiring high skilled line workers. Main factors influencing the choice of the country of location included (in the specific case of Mexico): (i) the rate of minimum wage (in comparison to USA and alternative developing country locations); (ii) the quality of the labour force and its productivity; (iii) the customs and

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42/ A.J. Scott: "The Semi-Conductor Industry in South East Asia, Organization, location and the International Division of Labour", in Regional Studies, Vol 21,2 pp 143 ff., Regional Studies Association, Cambridge, United Kingdom.

43/ "The use and economic impact.....", op. cit.

investment facilities offered, (iv) proximity limiting transport costs, and facilitating communications, including plant visits,close contacts with component suppliers and interventions by specialized technicians, etc, (v) low risk of theft of intellectual property.

48. Comparative cost calculations compiled by the USITC for typical clothing assembly processes show that the impact of labour cost savings can be quite important for the final product, even if only the most labour-intensive portions of the production processes are located abroad. In the case of men's casual slacks (cotton) the labour and overhead cost of the assembly operation were in 1987 one half of domestic cost if located in Hong Kong, but only one third of domestic cost if located in the Caribbean. If freight, material cost and domestic cost for labour are added, the total cost is still about 23 per cent below domestic cost in Hong Kong and about 30 per cent below domestic cost in the Caribbean.44/

49. Comparative wage levels have been the most important cost component for the decision to shift production to developing countries. According to the USITC survey 45/, fully fringed hourly wages for unskilled assembly workers were in 1986 less than half the lowest US rates (of Puerto Rico) in Singapore and Taiwan Province of China, about one third in Malaysia, Brazil and the Republic of Korea, one quarter in Costa Rica, Colombia, Mexico, Hong Kong, the Philippines and the Dominican Republic and less than 20 per cent of the lowest US rate in Jamaica, Barbados and Haiti. By contrast, wage levels in some other Latin American countries for unskilled assembly workers were relatively high which may have had some influence on the scarcity of sub-contracting from

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44/ Based on data contained in "Imports under Items 806.30 and 807.00 of the Tariff Schedules of the United States, 1984-1987", Table 4-3, op. cit.

45/ "The use and economic impact....."Table 7-31, op. cit.

most countries of that region. In general, the comparative wage situation has turned around from Asian to Caribbean countries and Mexico during the 1980s: average hourly compensation of Mexican "maquila" workers fell from US $ 1,42 in 1980 to US $ 0,80 in 1986, due to the devaluation of the Mexican peso, while rapid wage increases took place in the Republic of Korea, Singapore and other Asian countries in the recent past.

50. With regard to the incidence of sub-contracting on developing countries, all indications converge, that sub-contracting has made a major contribution to the dynamic growth of manufactures exports from a number of them during the 1980s. Various experiences also show, that sub-contracting can make an important contribution to create employment: for example jobs in the Mexican "maquiladora" industries rose from 127.000 in 1982 to 370.000 in 1988; 46/ or, by 1985, total employment in South-East Asian semi-conductor industry reached about 150,000 workers, one third of which in locally owned plants.47/ However, in many countries and industries, international sub-contracting industries have little or no linkages with domestic industries.

51. This is also confirmed by the results of the USITC Survey, which provides data on the composition of production costs and origin of materials for US imports under TSUS item 807.00 by industry group in 1986 48/. With respect to labour cost, they amounted an average to 21 per cent or production cost. Labour content was particularly low for assembly of car engines and radio equipment (4 per cent and 9 per cent respectively). It ranged between 12 and 19 per cent in most other branches (including semi-conductors, motors

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46/ "Maquila : Una expansión con interrogantes", AL-RCMEX - 176-89-213, Agencia latinoamericana de servicios especiales de información (ALASEI). See also "Transnational Corporations in World Development" UNCTC New York 1988 (ST/CTC/89)

47/ A.J. Scott, op.cit.

48/ "The use and economic impact...." op. cit. pages 3-7 and ff, and tables 3-7, 3-8 and 3-12.

and related products, TV and recording equipment, scientific instruments, etc) and 21 - 23 per cent for automotive products and their components. Labour contents was high,however, for office machines with 35 per cent and clothing (between 23 per cent for trousers and 40 per cent for shirts and blouses).

52. With regard to linkages with domestic industries there is a striking disparity with regard to local sourcing of components between Mexico and the Caribbean on the one hand, and South-East Asian countries on the other. Purchase of components from domestic sources is insignificant in Mexico and the Caribbean, while it reaches 29 per cent of total costs in Eastern Asian countries (excluding Japan). On average, domestic purchases account only for 2 per cent of total costs in Mexico; they are only of some significance for car engines (32 per cent) and miscellaneous manufactures (16 per cent). Most of the components used are of US origin, while 24 per cent originate from third countries (in particular Japan, but also developing countries). The use of Caribbean components is negligible (less than 0,5 per cent of total costs). On the other hand, domestic sourcing in East Asia is only slightly less than component sourcing in the United States (29 per cent as compared to 34 per cent), but varies widely amongst branches: it ranges from as low as 2 per cent for semi-conductors (the bulk of the components being imported from United States) over 23 per cent for a variety of other electrical articles to about 50 per cent for office machines and internal combustion engines (where they exceed the value of US components accounting for 12 per cent and 40 per cent respectively). This disparity is mainly related to the existence of a performant and quality-oriented components industry in South-East Asia, which facilitates the use of local components by assembly industries.

53. Total domestic value added of most Mexican and Caribbean products remains therefore very low: the Mexican average rate of 17 per cent is half of the threshold required for GSP access to the United States, e.g. 35 per cent.

In the Caribbean domestic value added is virtually identical with labour cost and ranges between 20-26 per cent for clothing.

54. On average value added in Asian developing countries is more than three times that of Mexico and comes close to 60 per cent: it is particularly high for office machines, other internal combustion engines and other electrical articles (52 - 87 per cent) but remains as low as 20 per cent for semi-conductors. Even within the same product groups, Asian operations are frequently more labour-intensive than similar operations in Mexico (radio equipment, body supporting garments). These wide differences would leave apparently some room for deepening the assembly processes and developing component supply capacity in the Central American and Caribbean regions.

55. The low value added of Mexican and Caribbean assembly exports dampens the export success achieved. Due to the high import contents net foreign exchange earnings are substantially less than for average industrial exports. (They were estimated by national Mexican sources at about US $ 1,5 billion).

56. The main export orientation for assembly products under TSUS item 807.00 remains the US market. A small but increasing share of offshore production in Mexico and the Caribbean countries is being exported to third countries. About one quarter of the US enterprises involved find that offshore processing facilities in these countries were important for gaining access to third countries, in particular the Latin American Integration Association. Regional markets have also grown rapidly in South-East Asia for several assembly products. According to a survey of enterprises engaged in the semi-conductor industry, some 16-18 per cent of all shipments of semi-conductor devices from US-owned branch plants in that region went by the mid-1980s directly to consumers in the Asian region (including Japan) and about 15 per cent directly to Europe. This had also encouraged several major producers to establish

marketing, sales and after-sales service facilities in South-East Asia and the development of regional centers of management and quality control before exports.[49/] An important portion of sub-contracting exports also takes place through subsidiaries in free zones of developing countries.

57. As the process of international economic adjustment proceeds, it is likely that sub-contracting arrangements and related forms of relocation of distinct labour-intensive production processes to developing countries will also progress: a tightening of competition on the domestic or regional markets of major developed countries would also lead to similar results. Striking disparities in foreign sourcing between the same industries of various developed countries show the potential for future growth of that type of intra-industry trade between developed and developing countries.

58. With regard to developing countries, the most critical issues relate to finding ways and means to (i) increase linkages between assembly industries and domestic industries through increased sourcing of local components and (ii) intensify progressively vertical integration towards enabling domestic enterprises to advance towards effective production and building up an independent technological mastery and marketing capacity of their own. The wide disparities amongst various developing countries in regard to local sourcing with respect to the same product category underline the importance of building up a competitive local enterprise capacity. This requires appropriate stimuli and support measures by the Governments of developing countries concerned. Foreign sub-contracting firms can and have also played an important role in support of local enterprises regarding training, quality

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49/ A.J. Scott, op. cit, p. 154.

control and other essential factors of international competitiveness. Linkages could also be promoted by graduating investment incentives according to the degree of local input sourcing by foreign sub-contractors and their readiness to associate domestic joint venture partners. It would be important to increase knowledge about the range and effectiveness of such measures.

Table 1: Foreign Direct Investment Flows to Selected Developing Economies

	1986		1987		1988 Jan-Jun / 1987 Jan-Jun
	Million $	Increase rate 86/85 in %	Million $	Increase rate 87/86 in %	Increase rate in %
South East Asia					
Thailand 1/	1.358	+ 67	6.505	+ 360	+ 190
Indonesia	826	- 4	1.484	+ 80	+ 318
Taiwan Province of China	770	+ 10	1.419	+ 84	- 24
Korea Rep. of	354	- 34	1.060	+ 199	+ 51
Singapore 1/	547	+ 34	725	+ 22	+ 1
Malaysia 1/	202	+ 61	301	+ 43	+ 205
Philippines 1/	78	- 35	165	+ 14	+ 404
Latin America					
Mexico	2.421	+ 29	3.877	+ 60	+ 37
Chile	565	+ 22	1.237	+ 119	+ 214
Colombia	441	- 10	321	- 27	+ 19

1/ Indicates increase rates based on national currency.

Source: 1989 JETRO White Paper on World Direct Investments, Japan External Trade Organization, March 1989.

Table 2: Export oriented Joint Ventures

Branch	Ownership/arrangements		Date and implementation status	Trade orientation
Location: Argentina				
Methanol	Petroquimica Austral :		June 89[b/]: planned	n.a.
	Exxon Corp. (USA)	n.a.		
	Macri	n.a.		
	Sevel	n.a.		
	Ciamar	n.a.		
Location : Botswana				
Chemicals (Na CO3)	n.a. :		Dec. 88[b/]: contract signed, production planned for 1992	South Africa, Zambia, Zimbabwe
	African Explosive & Chemical Industries (S. Africa)	52 %		
	Zimbabwe	n.a.		
	Botswana	n.a.		
	Zambia	n.a.		
Location : Brazil				
Aluminium	Albrás :		Nov. 87[a/]: producing	100% exports Japan
	Nippon Amazon Aluminium (Japan)	49 %		
	Cia Vale do Rio Doce	51 %		
Armement	Production of missiles under license :		Nov. 87[a/]: contract signed	Exports to developing countries
	British Aerospace (UK)	n.a.		
	Orbita	n.a.		n.a.
	Production of the boat "Mallet" :		Nov. 87[a/] expected to produce by 1988	n.a.
	Verolme	n.a.		
	Vickers	n.a.		

Source: Own compilation based on various periodicals
a) Industrie et Développement International; b) Nachrichten für den Aussenhandel; c) Far Eastern Economic Review; d) Marchés Tropicaux; e) Automobile industry in Korea, KAICA, 1988 and "La Corée du Sud, nouveau grand de l'industrie automobile mondiale" J. Ph. Rennard, op.cit. [various issues from 1985 onwards for a), 88 onwards for b), c), d) and e)]

Note: If not otherwise indicated the company is of the country of location

Branch	Ownership/arrangements	Date and implementation status	Trade orientation
Location: Chile			
Cellulosis	n.a. : Cia. Manufacturera de papeles y cartones n.a. Simpson Paper Co.(USA) n.a.	Feb. 89 b/: planned plant construction	n.a.
	Papeles Bio-Bio : Buckingham Enterprises Ltd (UK) n.a. Bio Bio Cayman Ltd (?) n.a. Fletcher Holding Ltd (?) n.a.	Feb. 89 b/: planned	n.a.
	Andinos S.A. : Cia. Acero del Pacifico n.a. Armindus Holding (?) n.a.	Feb. 89 b/: planned	n.a.
Location : Colombia			
Coffee	n.a. : Colcurtidos) Progel) 51 % Rothfos (FRG) 49 %	March 87: contract signed	Exports to Europe
Location : Egypt			
Telecom. equipt	n.a. : Arento & Egyptian Telephone Co. 70 % Siemens (FRG) 30 %	Mai 89 b/: contract signed	n.a.
Location : Indonesia			
Chemical catalysators	PT Kujang United Catalyst: United Catalyst Inc. (USA) 40 % PT Pupeek Kujang 30 % PT Argamulya Tirta 30 %	March 87 a/: plant in construction	20 % exports
Helicopters	Licence to build for exports 80-100 units : PT Nusantara Messerchmitt-Boelkow-Blohm (FRG)	March 87 a/: contract signed	South-East Asia

Branch	Ownership/arrangements		Date and implementation status	Trade orientation
Location: Indonesia (continued)				
Automobiles	PT Toyota Astra Motors :		March 87[a/]:	South East
	Toyota Motor Corp. (Japan)	49 %	Exporting	Asia,
	PT Astra Internat.Inc	51 %	Mai 89[b/]	Europe
	n.a :		Mai 89[b/]:	Japan, Thai-
	Krama Yudha Motor	n.a.	Exporting	land, Taiwan
	Mitsubishi (Japan)	n.a.		Province of China
Aluminium	n.a. :		April 87[a/]	Japan
	n.a.	25 %		
	Overseas Economic Development Corp. (Japan)	75 %		
Petrochemicals	PT Petrindo		Nov. 88[b/]: producing, expansion planned in 1989, founded in 1987	ASEAN countries
	PT Petrokimia Gresik	85 %		
	Hitachi Zosen Corp. (Japan)	15 %		
Note: 21 joint ventures with Korea, Rep. in 1988 essentially to export to the USA in the textile & footwear sector (Feb. 89[b/])				
Location : Korea Rep.				
Automobile (passenger cars)	Daewoo Motor Comp. :		Rapid export expansion since 1987 under marketing agreement with GM. Since 1986, production of European GM model under additional licence agreements with GM, for cars, motors and other parts [e/]	USA and Canada
	Daewoo (RoK)	50 %		
	General Motors Corp. (USA) since 1984	50 %		
Automobile (passenger cars, trucks, etc)	Kia Motor Corp.		Large scale exports exports since 1987 under marketing arrangements with Ford under its brand name. Car production since 1987. JV approved in 1983 [e/]	Mainly North America
	Kia	80 %		
	Mazda Motor Corp.			
	C. Itoh & Co.	10 %		
	Ford Motor Corp.(USA)	10 %		

Branch	Ownership/arrangements		Date and implementation status	Trade orientation
Location : Korea Rep. (continued)				
Automobile (Passenger cars)	Hyundai Motor Comp.:		Rapid expansion of car exports since 1984. Investment in car and components production in Canada (1989/1990) JV approved in 1982 Additional licence agreements with Mitsubishi for cars, motors, transmissions and other parts e/	USA, Canada (expanding in Western Europe and SE Asia)
	Hyundai (RoK)	n.a.		
	Mitsubishi Motor Corp. (Jap. 1982)	n.a.		
	Mitsubishi Corp. (Jap. 1982)	n.a.		
Automobile components (Aluminium radiators)	Halla Climate Control Corp.		Indirect exports: (AEM for Hyundai) Direct exports JV approved in 1986e/	
	Mando Machinery Corp. (RoK)	50 %		
	Ford Motor Corp.(USA)	50 %		
Automobile components (Transmissions, axles, engine gaskets, etc)	Korea Spicer Corp.:		Indirect exports (AEM for 5 Korean car manufacturers) Direct exports JV approved in 1986 e/	West Europe
	Korea Spicer	n.a.		
	Dana Corp. (USA)	n.a.		
Tyres	n.a. :		June 88c/: producing since oct. 87	n.a.
	Woosung Industrial	50 %		
	Michelin (France)	50 %		
Machinery	Samsung-Klöckner Machinery Co. :		June 89b/: contract signed	South East Asia
	Samsung	50 %		
	Klöckner Werke (FRG)	50 %		
Tyres & rubber	n.a. : (3 projects)		April 89b/: planned	n.a.
	Goodyear(USA) 80% (20%,50%)			
	Sunkyong 20% (80%,50%)			
Clothing research	Seoul Fashion Design Center		May 89b/: contract signed planned to start in sept. 89	Japan
	Shinsung Tongsang	n.a.		
	Segye Corp. (Japan?)	n.a.		

Branch	Ownership/arrangements		Date and implementation status	Trade orientation
Location: Malaysia				
Automobile	Perushahaon Otomobil Nasional (Proton) :		Jan. 87[a]: exporting	Asia, Europe, USA
	Heavy Industries Corp. Malaysia*	n.a.	Dec. 88[b] Oct. 86[a]	
	Mitsubishi (Japan)	15.0%	July 85: producing	
	Mitsubishi Motors Corp. (Japan)	n.a.	Aug. 83: plant construction	
			May 83: contract signed	
			Feb. 82: intension expressed	
Petrochemicals	Ethers production :		Nov. 87[a]: planned	33 % to Europe, USA Australia
	Petronas	60.0 %		
	Neste Oy (Finland)	30.0 %		
	Idemitsu Petrochemical Co. Ltd. (Japan)	10.0 %		
	P-Propylene production :			
	Petronas	55.0 %		
	Neste Oy (Finland)	10.0 %		
	Idemitsu (Japan)	35.0 %		
Fertilizers	Asean Bintubu Fertiliser :		Nov. 87[b]: producing, expansion plans	ASEAN countries
	Malaysia	63.5 %		
	Thailand	13.0 %		
	Philippines & Singapore	23.5 %		
Steel	Perdama Corp. of Malaysia:	70.0 %	Jan. 89[b]: contract signed, production planned for end 89	95 % export
	China Metallurgical Construction Corp.(China)	30.0%		
Copper pipes	n.a. :		Mai 89[b]: contract signed	n.a.
	Metdist group (UK)	n.a.		
	Metrod	n.a.		
Location : Mexico				
Electr. machinery	n.a. :		July-Aug. 87: signature planned	Latin America
	Alsthom (France)	49.0 %		
	Turalmex	51.0 %		

* Mitsubishi owns 15 % of its capital.

Branch	Ownership/arrangements		Date and implementation status	Trade orientation
Location: Morocco				
Telecommunications	n.a. : CGE Maroc Marotebec Alcatel CIT (France)		Nov. 88[d/]	North Africa & Africa
Location : Nigeria				
Petroleum products	Nigerian LNG : Nigerian National Petroleum Corp. Royal Dutch/Shell (Neth.) Nigerian Agip Oil Elf Aquitaine (France)	 60 % 20 % 10 % 10 %	June 89[b/]: planned	n.a.
Location: Philippines				
Petrochemicals	Bataan Petrochemicals Corp. USI Far East Corp (Taiwan)& China General Plastic Corp) (Taiwan Province of China) Philippine National Oil Co.	 90 % 10 %	June 88 [c/]: contract signed	
Note: in 1988 5 JV projects for exports with Taiwan Province of China, June 88[c/]				
Flat glass	Republic Glass Corp. (Phil.) Asahi (Japan)	n.a. n.a.	Project planned (Sept. 89)	About half of the production to be exported, primarily to Japan
Cotton yarns	Philippine partner Toyo Menka Kaisha Ltd (Japan Trading Corp.)	30 % 70 %	Project (Sept. 89)	About three quarters of production for exports to Japan (plus indirect exports by processing industry)

Branch	Ownership/arrangements		Date and implementation status	Trade orientation
Location: Saudi Arabia				
Elect. cables	Saudi Cable Co. :		Nov. 88[b/]: producing. Founded in 1975	40 % exports
	Shareholders from Saudi Arabia and other gulf cooperation council countries	n.a.		
Location: Singapore				
Helicopters	n.a. :		March 87[a/]: in operation since 1977	South East Asian Region
	Samaero (France)	n.a.		
	SAMCO	n.a.		
Location : Somalia				
Cattle, live animals	Gisoma :		Mai 89[b/]: contract signed	PTA and SADCC countries
	Giza (Italy)	n.a.		
	Somalia	n.a.		
Location : Sri Lanka				
Electronics	Jungpoong-Avance :		June 89[b/]: contract signed Feb 89 [b/]	n.a.
	Avance	49 %		
	Jung Poong Products Co.	51 %		
				n.a.

Note: 48 export oriented joint ventures in 1988 the sectors of: Rubber & Synthetics, Textiles, Ceramics, Steel

Location : Taiwan Province of China				
Software	n.a. :		June 87[b/]: planned	n.a.
	Tatung Co.	50 %		
	Electronic Data System (USA)	50 %		
Electrical Machinery equip.	n.a. :		Dec. 88[b/]: planned	South-East Asian Region
	Toys Menka Kaisha Ltd. (Japan)	n.a.		
	n.a.			

Branch	Ownership/arrangements		Date and implementation status	Trade orientation
Location : Thailand (continued)				
Electronics	Toshiba Display Device Thailand Co :		Jan.89[a/]:	Asia,
	Toshiba Corp.(Japan)	n.a.	intention, planned	Europe,
	Thailand	n.a.	to export in 1990	USA
	Thai Toshiba Lighting Co :			
	Japan	49 %	Jan 89[b/]:	
	Thailand	51 %	authorized	
	Churairat E. Bonothurn:			
	Japan	50 %	Jan 89[b/]:	
	Thailand	50 %	authorized	
	Somphongse Nakornsri:		April 89[b/]:	100 %
	Japan and Taiwan Province of China	30 %	authorized	exports
	Thailand	70 %		
Petrochemicals	Thai Petrochemical Industry Co.:	70 %	Dec.87[a/]: authorized	80 % exports
	UBN Siskum Co (Japan)	30 %		
Food	Ajinomoto :		Jan.89[b/]:	n.a.
	Japan & UK	70 %	authorized	
	Thailand	30 %		
	Prayoon Pholpipat:		Jan. 89[b/]:	n.a.
	Japan & Taiwan Province of China	49 %	authorized	
	Thailand	51 %		
	Garden Green Produce Co Ltd		Jan. 89[b/]:	100% exports
	Australia	49.9%	authorized	
	Thailand	50.1%		
Machinery	MHI-Mahachak Airconditioner Co. Ltd.:		Jan 83[b/]: authorized ?	n.a.
	MHI (Japan)	51 %	Dec.88[b/]:	
	Mahachak (Thailand)	49 %	producing	
	Thai Compressor Manufacturing Co.:		Dec.88[b/]: producing	n.a.
	MHI (Japan)	32 %		
	Kulchorn-Kirby Co. (Thailand)	68 %		
Footwear	SCS Shoes Co Ltd.:		Jan.89[b/]:	95 % exports
	China	10 %	authorized	
	Thailand	90 %		
	Wong Woon Khiang :		Jan.89[b/]:	100% exports
	Singapore	50 %	authorized	
	Thailand	40 %		

Branch	Ownership/arrangements		Date and implementation status	Trade orientation
Location : Thailand (continued)				
Rubber	DN Azad :		Jan.89[b/]:	n.a.
	India, Singapore	49 %	authorized	
	Thailand	51 %		
	Anurat Thianthan :		April 89[b/]:	n.a.
	France & USA	45 %	authorized	
	Thailand	55 %		
Tyre	Michelin Siam Co :		Jun 88[c/]:	60 % exports
	Michelin (France)	n.a.	created in Dec. 87	to Asia
	Siam Tyre	n.a.		
Furniture	Praderm Yuvathepakorn :		April 89[b/]:	100% exports
	Singapore	90 %	authorized	
	Thailand	10 %		
Jewelry	Sasima Viraphongse :		April 89[b/]:	100% exports
	Australia	60 %	authorized	
	Thailand	40 %		
Automobile	n.a. :		Jan. 89[b/]:	50 % exports
	Yontrakit Motors Co.	49 %	planned	
	Ogikara Ironwork Co.	%		
	(Japan)	34 %		
	C. Toh (Japan)	12 %		
	C. Toh(Thailand)	5 %		
Tools	Kawee Vasuwat		Mai 89[b/]:	essentially
	Japan	49 %	authorized	exports
	Thailand	51 %		
Metal products	n.a. :		June 89[b/]:	50 % exports
	Korean Machinery Co.Ltd		authorized	
	Republic of Korea	60 %		
	Thailand	40 %		
Leather	Wen Hwa Tannery		June 89[b/]:	essentially
	Taiwan Prov. of China	49 %	authorized	exports
	Thailand	51 %		

Branch	Ownership/arrangements		Date and implementation status	Trade orientation
Location : Turkey				
Synthetic fibers	Dusa :		Oct. 86[a]:	25 % exports
	Du Pont de Nemours (USA)	50 %	contract signed	
	Sabanci	50 %		
Electric house equipt	n.a. :		Feb. 89[b]:	Middle East countries
	Profilo	80 %	planned	
	AEG (FRG)	20 %		
Location : Venezuela				
Epoxide	Epoxyquim :		Feb. 87 [a]:	Andean group
	Shell Quimica (Neth.)	40 %	planned to start production in 1988	
	Corporación Grupo Quininco	60 %		
Tooth amalgam	n.a. :		March 87 [a]:	Andean group, USA
	Quifoven-Engelherd (USA) n.a.		factory opening	
Aluminium	Alusur :		March 87[a]	n.a.; probably USA, EEC, Japan
	State Holding	20 %	planned to start production in 1989	
	Suramericana de Aleaciones	40 %		
	Austria metals(Austria)	40 %		
	Comercial Tecnica del Aluminium :		Dec. 88 [b]:- contract signed	n.a.
	Corporación Venezolana de Guyana	n.a.		
	Union Cientifica Productora de Metales (Bulgaria)	n.a.		
	D.K.(-Intex(U.K))	n.a.		
	Noral	n.a.		
Petrochemicals	Super Octanos CA		June 87 [a]:	n.a.
	Eco Fuel (Italy)	49 %	contract signed	
	Pequiren	49 %	production planned for 1989	
	Other			

Branch	Ownership/arrangements		Date and implementation status	Trade orientation
Location : Yugoslavia				
Glass	n.a. :		Apr. 89[b/]:	Austria,
	Lipik Glass Factory	56 %	contract signed	Italy, FRG
	Afg. Technologies(USA)	44 %		
Accumulators	n.a. :		June 89[b/]:	Exports
(in batteries)	Svetlost	50 %	contract signed	
	Jungfer (Austria)	25 %		
	Bujanovac & Zastava	25 %		
Commercial	TAM (Tovarna Automobilov):		JV agreement signed	Exports of
vehicles	TAM	n.a.	1989 together with	components
	IVECO (Italy)	n.a.	IVECO production licences and training by IVECO [b/]	to IVECO envisaged
Location : Zimbabwe				
Chemicals	n.a. :		Feb.89[b/]:	PTA and
	Astra Paints	n.a.	planned	SADCC
	Borregaard Ind. Ltd. (Norway)	n.a.		countries